ABSTRACT OF THE DISCLOSURE

When a branch instruction is decoded by the instruction decoders 409a ~ 409c, the upper 29 bits of the PC relative value included in the branch instruction are sent to the upper PC calculator 411 and the lower 3 bits are sent to the lower PC calculator 405. The lower PC calculator 405 adds the lower 3 bits of the PC relative value and the lower 3 bits of the present lower PC 404 and sends the result to the lower PC 404 as the updated lower PC. The upper PC calculator 411 adds the upper 29 bits of the PC relative value, the upper 29 bits of the present upper PC 403, and a carry that may be received from the lower PC calculator 405, and sends the result to the upper PC 403 as the updated upper PC.

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